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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/255,605	02/22/1999	SHUNPEI YAMAZAKI	SEL-125	8794

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COOK MCFARRON & MANZO
200 WEST ADAMS STREET SUITE 2850
CHICAGO, IL 60606

EXAMINER

KOVALICK, VINCENT E

ART UNIT	PAPER NUMBER
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2677

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/255,605	Applicant(s) YAMAZAKI ET AL.	
	Examiner Vincent E. Kovalick	Art Unit 2677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/18/05 & 10/06/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Applicant's Amendment dated October 6, 2005 in response to USPTO Office Action dated January 12, 2005.

New claims 27-35 have been noted and entered in the record.

The response to Applicant's Remarks are addressed in Item 9 hereinbelow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 7, 13 and 19-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman (U.S. Patent No. 5,281,957) taken with Yamauchi et al. (USP 5,276,471) in view of Bertsch (JP408087470A) taken with Catallo et al. (U.S. Patent No. 5,867,817) in view of Miller et al (USP 5,784,569).

Relative to claims 1, 2, 7, 13 and 19-35 Schoolman **teaches** a portable computer and head mounted display (col. 2, lines 63-68; col. 3, lines 1-33 and Figs. 1 and 7). Schoolman further **teaches** an information processing device comprising: a display device having flat panel displays for right and left eyes mounted on the head of a user (col. 3, lines 1-4 and Fig. 7); still further Schoolman **teaches** an input operation device (keyboard) connected to a controller

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(computer), col. 6, lines 50-63 and Fig. 10, item 73).

Schoolman **does not teach** a controller which transmits a first information to at least one of said flat panel displays to display said first information; or and a camera provided over said input operation device, wherein said controller transmits a signal in the form of an electric wave to said display device and wherein said flat panel displays are capable of displaying a plurality of pieces of information at a time, and wherein said display device, said controller, said input operation device and said camera are adapted to be used by the same user, and wherein an image second information different from said first information is transmitted from a TV tuner to said at least one of said flat panel displays to display said image second information; or a pick-up device which converts as least images of and input operation device and a hand of a user into electrical signals and supplies said electrical signals to said controller.

Yamauchi et al. **teaches** a head mounted image displaying device capable of being applied as a glass type displaying apparatus (col. 1, lines 30-67 and col. 2, lines 1-10); Yamauchi et al. further **teaches** a controller which transmits a first information to at least one of said flat panel displays to display said first information (col. 4, lines 9-18 and Fig. 4); and wherein an image second information different from said first information is transmitted from a TV tuner to said at least one of said flat panel displays to display said image second information (col. 4, lines 9-18 and Fig. 4); still further Yamauchi et al. **teaches** an input operation device connected to said controller (col. 4, lines 9-18 and Fig. 4).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Schoolman the feature as taught by Yamauchi et al. in order to

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facilitate displaying images from two different sources at the two different LCD's housed in the head mounted unit.

Schoolman taken with Yamauchi et al. **does not teach** ; said information processing device comprising and a camera provided over said input operation device; or said controller transmits a signal in the form of an electric wave to said display device and wherein said flat panel displays are capable of displaying a plurality of pieces of information at a time; wherein said display device, said controller, said input operation device and said camera are adapted to be use by the same user; or a pick-up device which converts at least images of and input operation device and a hand of a user into electrical signals and supplies said electrical signals to said controller.

Bertsch **teaches** a display related communications system (Purpose); Bertsch further **teaches** a camera (image pick-up device) provided over an input operation device (Constitution). It being understood that the said work station would provide a field of view of any input device placed on the workstation table. Further, it would have been obvious to a person of ordinary skill in the art at the time of the invention that the camera (pick-up device) in the system as taught by Bertsch could be oriented such that the field of view would take in a user input device, and whatever is in the field of view of the camera, including the hand of the user, would be included in the image that is transmitted to a display device.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Schoolman taken with Yamauchi et al the features as taught by Bertsch in order to put in place an image pick-up device that would take in a defined field of view.

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Schoolman taken with Yamauchi et al. in view of Bertsch **does not teach** an information processing device wherein said controller transmits a signal in the form of an electric wave to said display device and wherein said flat panel displays are capable of displaying a plurality of pieces of information at a time; or, wherein said display device, said controller, said input operation device and said camera are adapted to be used by the same user.

Catallo et al. **teaches** a head mounted display system (col. 2, lines 16-67 and Fig. 1); Catallo et al. further **teaches** a controller connected to said display device (col. 3, lines 55-67 and col. 4, lines 1-8); and wherein said controller transmits a signal in the form of an electric wave to said display device and wherein said flat panel displays are capable of displaying a plurality of pieces of information at a time (col. 3, lines 53-67 and col. 4, lines 1-8).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Schoolmen taken with Yamauchi et al. in view of Bertsch the feature as taught by Catallo et al. in order to communicate with other system units using infra-red wireless communication technology or radio wireless communication technology (col. 4, lines 2-8, Catallo et al.).

Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. **does not teach** said information processing device wherein said display device, said controller, said input operation device and said camera are adapted to be used by the same user; or a pick-up device which converts at least images of and input operation device and a hand of a user into electrical signals and supplies said electrical signals to said controller.

Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al.

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does not teach said information processing device wherein said display device, said controller, said input operation device and said camera are adapted to be used by the same user.

Miller **teaches** a computer system for input/output data transfers (col. 2, lines 58-67 and col. 3, lines 1-47); Miller further **teaches** said display device, said controller, said input operation device and said camera are adapted to be used by the same user (col. 4, lines 26-47 and Fig. 1) still further, Miller **teaches** an image pick-up device which converts at least images of an input operation device and a hand of a user into electrical signals and supplies said electrical signals to a display controller (col. 4, lines 26-47 and Fig. 1); in addition Miller **teaches** a camera connected to a controller (Fig. 1).

In addition it is well understood in the art and in common practice, in active matrix flat panel display devices, for each pixels to have an associated thin film transistor (TFT) and for TFT's to be incorporated in pixel driving circuits and to have these associated logic elements implemented on the same substrate.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. the features as taught by Miller et al. in order to put all the elements of the system, e.g. the display device, controller, input operation device and said camera at the disposal of the same system user.

Regarding claims 19 and 21, Miller et al. further **teaches** said information processing device wherein a camera (pick-up device) is provided apart from said display device (col. 2 lines 48-51).

Relative to claim 20, Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. **does not specifically teach** a display device wherein said driving circuit comprises a source-side driving circuit; said step being in common practice in driving flat panel liquid crystal display devices.

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Because said feature is in common practice and well know in the art, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include said feature in the design as taught by Schoolman taken with Yamauchi et al. in view of Catallo et al. taken with Riley in view of Miller et al. in order to have in place the circuitry necessary to drive and scanning and data lines of the flat panel display.

4. Claims 3, 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. taken with Funai et al. as applied to claims 2, 8 and 14 respectively in items 3 hereinabove and further in view of Oka et al. (U. S. Patent No. 6,235,563).

Relative to claim 3, 9 and 15, Schoolman taken with Yamauchi et al. in view of Catallo et al. taken with Riley in view of Miller et al. **does not teach** an information processing device wherein the plane of said channel formation regions is oriented substantially in a <110> direction.

Oka et al. **teaches** semiconductor devices and method of manufacturing the same (col. 3, lines 18-65 and col. 4, lines 1-58); Oka et al. further **teaches** an information processing device wherein the plane of said channel formation regions is oriented substantially in a <110> direction (col. 4, lines 64-67; col. 5, line 1 and col. 11 lines 34-40).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use in the device as taught by Schoolman taken with Yamauchi et al. in view of Catallo et al. taken with Riley in view of Miller et al. taken with Funai et al. the feature as taught by Oka et al of using TFT's comprising a crystal gain having a <110> plane orientation to optimize field effect mobility.

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5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over as applied Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. as applied to claim 2 in item 3 hereinabove, and further in view of Funai et al. (U. S. Patent No. 6,162,667).

Regarding claim 4, Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. **does not teach** an information processing device comprising a device wherein 90% or more of crystal lattices at grain boundaries of said channel formation regions have continuity.

Funai et al. **teaches a** method for fabricating thin film transistors (col. 3, lines 41-67 and col. 4 lines 1-67); Funai et al. further **teaches** an information processing device wherein 90 % or more of crystal lattices at grain boundaries of a channel formation regions have continuity (col. 12, lines 60-65). Though Funai et al. does not specifically cite 90 % he does teach "uniformity over a large area".

6. Claim 5, 11 and 17 are rejected under 35 U. S. C. 103 (a) as being unpatentable over Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. as applied to claims 1, 7 and 13 respectively in items 3 herein above, and further in view of Intriligator (U.S. Patent No. 6,163,323) taken with Lewis (U.S. Patent No. 6,040,812). Relative to claims 5, 11 and 17, Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. **does not teach** flat panel displays comprising a display device on which one screen is written at frequencies in the range from 30 Hz to 180 Hz and on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen.

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Intriligator **teaches** a self-synchronizing animation (col. 1, lines 6-9 and col. 2, lines 27-40).

Intriligator further teaches a display device on which one screen is written at frequencies in the range from 30 Hz to 180 Hz (col. 3, lines 24-37).

It would have been obvious to a person of ordinary skill in the art at the time of the invention provide to the device as taught by Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. the feature as taught by Intriligator in order to set a frequency range that includes a standard screen write frequency of 60 Hz.

Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. in view of Intriligator **does not teach** flat panel displays comprising a display device on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen.

Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. taken with Intriligator teaches a head mounted display comprising separate LCD's for each of the right and left eyes with the means to receive wireless input signals, with said a camera at the disposal of the user.

Lewis **teaches** an active matrix display with integrated drive circuitry (col. 1, lines 6-8 and 54-65; col. 2, lines 1- 16). Lewis further **teaches** display device on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen (col. 13, lines 23-34).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. in view of Intriligator the feature as taught by Lewis in order to provide a display refresh rate that is consistent with liquid crystal display technology and to further provide a voltage inversion technique in order to include a noise control feature in the matrix display devices.

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7. Claims 6, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. as applied to claims 1, 7 and 13 respectively in item 3 herein above, and further in view of Nishi et al. (U.S. Patent No. 5,541,747).

Regarding claims 6, 12 and 18 Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. **does not teach** a flat panel display device which is a liquid crystal display using a liquid crystal material which is antiferroelectric liquid crystal of ferroelectric liquid crystals substantially having no threshold.

Nishi et al. **teaches** an electro-optical device utilizing a liquid crystal having a spontaneous Schoolman taken with Yamauchi et al. in view of Catallo et al. taken with Riley further in view of Miller et al polarization (col. 1, lines 7-26; col. 6, lines 11-67; col. 7, lines 1-36 and Abstract). Nishi et al. further **teaches** a flat panel display device which is a liquid crystal display using a liquid crystal material which is antiferroelectric liquid crystals or ferroelectric liquid crystals substantially having no threshold (col. 11, lines 5-16 and Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. the feature as taught by Nishi et al. in order to enable the liquid crystal material in switching between different states.

8. Claims 8, 10, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. as applied to claim 7 and 13 in item 3 hereinabove, and further in view of Funai et al.

Regarding claims 8 and 14, Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. **does not teach** channel formation regions of TFTs connected to pixel electrodes of the said flat panel displays of said display device being

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constituted by a semiconductor thin film formed by a collection of a plurality of bar-shaped or planar bar-shaped crystals formed on an insulting surface.

Funai et al. **teaches** a method for fabricating thin film transistors (col. 3, lines 40-67; col. 4, lines 1-57 and col. 5, lines 1-60); Funai et al. **teaches** channel formation regions of TFTs connected to pixel electrodes of the said flat panel displays of said display device are constituted by a semiconductor thin film formed by a collection of a plurality of bar-shaped or planar bar-shaped crystals formed on an insulting surface (col. 1, lines 8-14; col. 4, lines 58-64 and col. 5, lines 40-56).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Schoolman taken with Yamauchi et al. in view of Bertsch taken with Catallo et al. in view of Miller et al. the feature as taught by Funai et al. in that it facilitates the fabrication of an active matrix type liquid crystal display device.

Relative to claims 10 and 16, Funai et al. **further** teaches an information processing device wherein 90 % or more of crystal lattices at grain boundaries of a channel formation regions have continuity (col. 12, lines 60-65). Though Funai et al. does not specifically recite 90 % he does teach "uniformity over a large area".

Response to Applicant's Remarks

9. In the amendment, Applicant did not comment on specific claims only to comment that all of the rejections were respectfully traversed; with the comments that excessive numbers of prior was used on which to base the rejections; and secondly that the rejections were based on hindsight.

Applicant's arguments filed October 6, 2005 have been fully considered but they are not persuasive.

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o In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In this case the knowledge is within the skill levels of the Examiner.

o In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

In applications where a larger number of limitations are recited that are common in analogous systems, the number of prior art references on which to base the rejections can vary.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	6,072,445	Spitzer et al.
U. S. Patent No.	6,043,800	Spitzer et al.
U. S. Patent No.	6,011,653	Karasawa
U. S. Patent No.	5,971,538	Heffner

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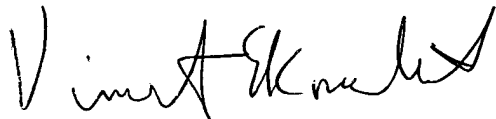
To Respond

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is 571-272-7669.

The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vincent E. Kovalick
1/6/06

AMR A. AWAD
PRIMARY EXAMINER

